Next WingNuts Chapter Meeting: ***Sat. Oct 8, 2022 12:00 PM –Chili Pitch In, Glen's Hangar - Hunter International Air-Field***

Next VMC Club Meeting: ***Tues. Oct 24, 2022 6:00 PM - Hunter International Air-Field***

WINGNUTS PLANE TALK

Chapter 1321 / South Middle Tennessee

Our Chapter Home Page: https://chapters.eaa.org/eaa1321

HAPPY HALLOWEEN

https://www.facebook.com/reel/489534069701671?fs=e&s=TIeQ9V

NOTE: IF, you haven't been to our Chapter Website in a while, when you get a chance, go check it out!! Please pass on your thanks to Robert Heller for persevering in figuring out how to update it!!! Once he gets use to creating and adding folders, etc we plan to add Chapter Pictures, including Members Airplanes. If anyone has thoughts on what else should be included on our site let me or Robert know!!

Question from the Editor: Did the Fisher Body Division of General Motors ever design and build a Prototype Fighter for the Military??? Read on to discover the answer later in the Newsletter!!!!

INSIDE THIS ISSUE

Note from your President Elect: I've enjoyed doing the Newsletter the last few years and I can probably continue putting the Newsletter together. But, If there is anyone that wants to tackle it and would like to become the Editor, let Glen or I know. It may be helpful as I move into the role of President.

PRESIDENTS CORNER:

Glen Smith

Summer is gone and Fall is here and with that we are starting it off with our chili cook off. As you should already know bring your favorite chili and remember to name it so we can vote for our favorite recipe. Now if you're not a cook or don't have a favorite recipe remember we need you to be a taste tester and judge.

This is a family event and will be held in my hanger so there should be plenty of room for all the chili's and plenty of seating. We will have drinks and ice available. And the forecast looks like great chili eating weather. Hope to see you all this Saturday at noon.

There are only a few months before year end. December is always our Christmas Banquet so that leaves only November for our final 2022 regular meeting. It sure seems like the year is coming to a quick finish, but we have had a good year. More on that in a future column.

Glen Smith

President

Secretary's 9/10/22 Meeting Minutes

Chapter 1321 Met at Hunter Field on September 10, 2022 presided over by President, Glen Smith

Elections for 2023 Officers were held with the following results

Craig Bixby, will replace Glen Smith as President
Glen Smith, will replace Scott Leveque as VP
Jim Tjossem will remain on as Treasurer
Paul Reding, will remain on as Secretary

Meeting Discussions

Importance of Hands On Preflights to find "hidden problems"
Keep Russ Sandstead and Mike Smith in your thoughts concerning their health issues
Chapter Name Tags are offered for sale at $5.00 **(see below)**

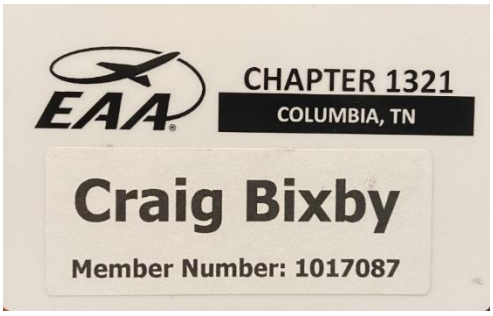
Members Discussions

Tom Lewis talked about his Structural issues in the tail of his ultralight cub
Scott Leveque discussed Kolb aircraft for sale in Indiana

Upcoming Chapter Schedule

Chili Dinner in Glen's Hangar at 12 PM, held in lieu of our October Meeting on 10/8
VMC Club will meet Tuesday Oct 25th[d] at 6 PM
Chapter Meeting will be held Nov 10th at 12 PM
Christmas Party in Glen's Hangar, held in lieu of our December Meeting on the 12/10.

Chapter Name Tags



The plastic name tags are preprinted with our Chapter info and have a magnetic clasp to attach it to your pocket

To receive yours,

Email Craig Bixby at n3165e@hotmail.com with your name and EAA Member Number. He will print up your Name Label

Pay your 5 dollars to Jim Tjossem

AOPA
your freedom to fly

Aircraft Preventive Maintenance

Thanks to the Federal Aviation Regulations, Part 43.3g, Pilots possess the ability to return aircraft to airworthiness after certain **"preventive maintenance"** actions.

"*[T]he holder of a pilot certificate issued under part 61 may perform preventive maintenance on any aircraft owned or operated by that pilot which is not used under part 121, 129, or 135 of this chapter.*"

NOTE: This Privilege is limited to the specific airplane you own or operate and hold at least the private pilot certificate

This does not apply to airplanes that you don't own or operate.

Authorized preventive maintenance **cannot involve complex assembly operations**

Aircraft preventive maintenance items are spelled out in Part 43, appendix A Item c. The items range from simply servicing oil to performing small fabric patches, repacking wheel bearings, repainting aircraft, updating GPS databases, and replacing fuel lines.

Click the links

To read this section of Part 43 to review the complete list

https://www.ecfr.gov/current/title-14/chapter-I/subchapter-C/part-43/appendix-Appendix%20A%20to%20Part%2043

Note: Scroll down to Section (c)

For an article on "Boldmethod.com"
https://www.boldmethod.com/learn-to-fly/regulations/your-guide-to-preventative-maintenance-what-you-can-fix/

Important NOTE: To meet the requirements of the FAA you must **self-assess whether or not you're qualified to "perform the work satisfactorily and safely."**

Just because the regulations allow you to do the maintenance yourself, doesn't mean it's necessarily a good idea, at least right away

If you don't come from a mechanical background, one of the best things you can do is work with a local A&P to get trained on a few preventive maintenance items before you take matters into your own hands.

There is also a catch. It's found in Part 43.13 and titled "Performance Rules (General).

The following three points—from paragraphs (a) and (b) of the performance rules—have been abbreviated to simplify the important points the maintenance performance rules for owners.

1. **Each person performing** maintenance, alteration, or **preventive maintenance** on an aircraft, engine, propeller, or appliance
   Shall use the methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques and practices acceptable to the Administrator.

2. He [or she] shall use the tools, equipment, and test apparatus necessary to assure completion of the work in accordance with accepted industry practices.

3. Each person *maintaining or altering, or* ***performing preventive maintenance, shall do that work in such a manner and use materials of such a quality, that the condition of the aircraft, airframe, engine, propeller,***

or appliance worked on will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness).

There is a published protocol for every maintenance operation on an aircraft, even the tightening of a nut or bolt.

All persons (Including Pilots) performing maintenance, preventive or otherwise, **must meet the same standards, as a certificated mechanic.**

I.E. The task must be accomplished according to "methods, techniques, and practices prescribed in the current manufacturer's maintenance manual or Instructions for Continued Airworthiness prepared by its manufacturer, or other methods, techniques, and practices acceptable to the Administrator."

In layman's terms the FAA is telling you that, just like a mechanic, to replace that tire (for example) you must have the

Current maintenance manual or acceptable procedure
Appropriate Tools
Proper parts
Requisite knowledge

So, step one for owners that want to start working on their airplanes is to have or have access to manuals, and have the tools required to properly perform each maintenance task.

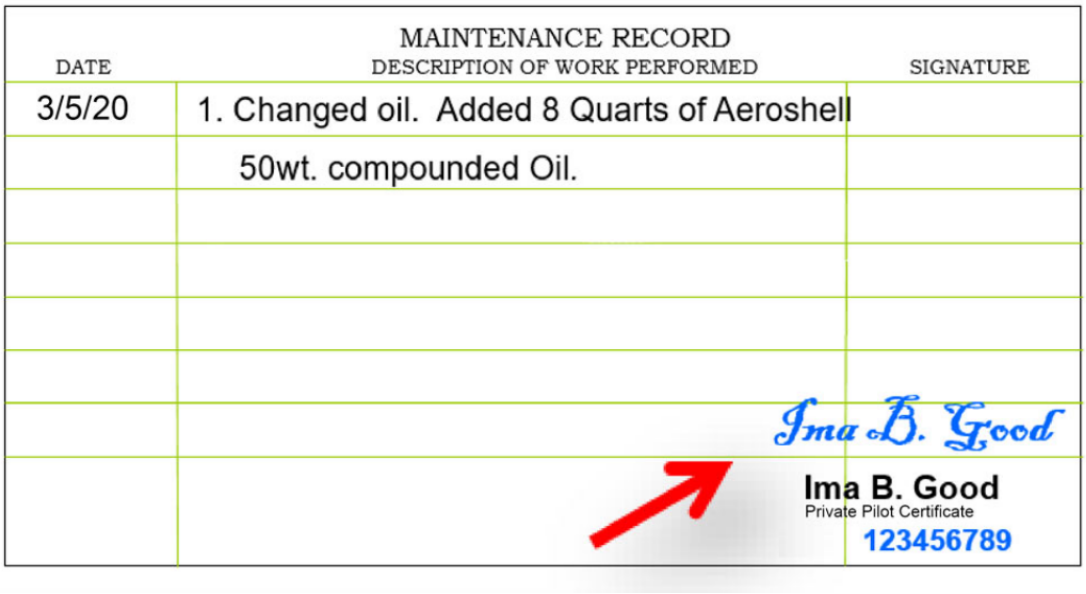
In addition to all that:

When work is completed, You are Required to enter your Preventive Maintenance in your Aircraft's Maintenance Logbook

Each entry must include the following information:

- A **description** of the work performed, or references to data that are acceptable to the Administrator.
- The **date** of completion.
- The **signature, certificate number, and kind of certificate** held by the person performing the work.

The signature constitutes an "approval" for return to service only for the work performed.



MAINTENANCE RECORD

DATE	DESCRIPTION OF WORK PERFORMED	SIGNATURE
3/5/20	1. Changed oil. Added 8 Quarts of Aeroshell	
	50wt. compounded Oil.	
		Ima B. Good
		Ima B. Good Private Pilot Certificate 123456789

NOTE: To be the most correct the entry should also include the Aircraft/Engine Time

Here is a partial list of maintenance that you, as the owner/operator, can perform

- **Remove, install, and repair landing gear tires**
- **Service landing gear wheel bearings** (for example, cleaning and greasing).
- **Service landing gear shock struts (for example, adding oil, air, or both).**
- **Replace defective safety wire or cotter keys.**
- **Lubricate items** not requiring disassembly other than removal of nonstructural items (for example, cover plates, cowling, and fairings).
- Replenish hydraulic fluid in the hydraulic reservoir.
- Replace safety belts.
- Replace bulbs, reflectors, and lenses of position and landing lights.
- **Replace or clean spark plugs and set spark plug gap clearance.**
- **Replace any hose connection**, except hydraulic connections.
- Replace and service batteries.

- Make simple fabric patches not requiring rib stitching or the removal of structural parts or control surfaces.
- Replace any cowling not requiring removal of the propeller or disconnection of flight controls.

Editors Note: Since, When Performing Preventative Maintenance, we are expected to Meet Part 43.13 Performance Rules

There may be more to performing these tasks than meets the eye

With that in mind, I'll discuss the Preventive Maintenance Items, highlighted in bold print above, in upcoming newsletters and possibly during Chapter Meetings

Editor Note: Well, winter is just around the corner so I thought I would put some info in the Newsletter relevant to Winter Ops or the lack of them.

First, what are the recommendations if you aren't able to fly much during the upcoming cold months.

Engine Storage 101: The 30-Day Rule

Engine Storage 101:The 30-Day Rule - Aviation Consumer

Manufacturers suggest that engine inactivity in excess of 30 days might require the need for special preservation methods to **fight corrosion.**

Everyone knows that like vehicles, parking aircraft for long periods of time is just a bad idea. But, How long is too long? It depends on the climate and how the engine was cared for during its time of rest.

Herewith are some tips worth considering when parking the engine for long periods.

Moisture Is Bad

Corrosion in aircraft piston engines not only results from moisture being introduced in to the engine's internal parts but is also caused from the byproducts of combustion, which include moisture that contaminates the engine's lubricating system and helps to form acidic byproducts in the oil.

According to Lycoming, "Our experience has shown that in regions of high humidity, active corrosion can be found on cylinder walls of **new engines**

inoperative for periods as brief as two days. In engines that have accumulated 50 hours or more time in service in a short period, the cylinder walls will have acquired a varnish that tends to protect them from corrosive action; such engines under favorable atmospheric conditions can remain inactive for several weeks without evidence of damage by corrosion."

Lycoming goes on to reiterate that aircraft operated close to oceans, lakes, rivers **and in humid regions** have a greater need for engine preservation than engines operated in arid regions.

Conversely, for those **engines subject to moderate amounts of blow-by and relatively high oil consumption, accumulating moisture and acid in the oil is a foregone conclusion, regardless of how often the aircraft flies.**

In some respects, we can do only so much to keep the damaging impact of corrosion to a minimum, but **some form of storage should be considered when limited operation and frequent periods of downtime are expected**.

The **Continental Motors** bulletin on engine storage is Service Information Letter 99-1, which has a specific checklist of products and procedures. There is also one published for fuel injection systems, SB 99-8B. For Lycoming engines the general publication is Service Letter L180B

Should You Ground Run?

Tempted to make tracks to the airport and fire up a slumbering engine for a few minutes of ground running? **It won't get hot enough to do much good. It might do more damage than good**.

To quote Lycoming again: "Engine temperature and length of operating time are very important in controlling rust and corrosion. The desired flight time for air-cooled engines is at least one continuous hour at oil temperatures of 165 degrees F to 200 degrees F at intervals not to exceed 30 days, depending on location and storage conditions." That one hour of operation does not include taxi, takeoff and landing time.

More than one tech told us that engines that are not operated in flight to normal operating temperatures at least once a week should be managed under some preservation or storage program to reduce the effects of corrosion.

In our view, the ground running of an engine is not a substitute for flying it when it comes to dispelling moisture. Running it on the ground simply doesn't get the engine hot enough, plus it tends to cause uneven heating at higher power, so you're likely just wasting fuel doing so.

Pulling It Through

We spotted an interesting point in Lycoming's SL L180B on pulling the propeller through-something a lot of pilots do when the engine sits for a while.

According to Lycoming, it's not recommended when the engine isn't run or flown for over a week or so.

> "Pulling the engine through by hand prior to start or to minimize rust and corrosion does more harm than good. The cylinder walls, piston, rings, cam and cam follower only receive splash and vapor lubrication. When the prop is pulled through by hand, the rings wipe oil from cylinder walls," the bulletin says.

Lycoming also states the cam load created by the valve train wipes oil off the cam and followers. After two or three times of pulling the engine through by hand without engine starts, the cylinders, cam and followers are left without a proper oil film.

Starting engines without proper lubrication can cause scuffing and scoring of parts resulting in excessive wear.

How Many Days?

Both manufacturers agree that inactivity in excess of 30 days strongly suggests the need for some special preservation methods and chemicals, especially if the aircraft is located near saltwater or a similar humid environment.

Lycoming offers a few procedures for installing a preservative, including draining the engine oil and replacing with a preservative oil mixture.

Remove the top spark plugs and through the spark plug hole, spray the interior of each cylinder, Reinstall the spark plugs and don't turn the crankshaft after the cylinders have been sprayed. And remember, of course, the preservation mixture won't lubricate the engine, so don't run it.

If the aircraft is stored in a region of high humidity, or near a sea coast, it is better to use **dehydrator plugs** instead of merely replacing the spark plugs as prescribed. Cylinder dehydrator plugs, MS-27215-2 or equivalent, may be used.

Preferably before the engine has cooled, **install small bags of desiccant in exhaust and intake ports and seal with moisture-impervious material** and pressure-sensitive tape. Any other opening from the engine to the atmosphere, such as the breather, and any pad from which an accessory is removed should likewise be sealed.

Firmly attach red cloth streamers to any desiccant bags installed in the intake and exhaust passages to ensure material is removed when the engine is made ready to fly again. Streamers should be visible from outside the aircraft. **The propeller should be tagged, "Engine preserved-do not turn the propeller." This isn't exactly a do-it-and-forget-it task.**

At 15-day maximum intervals, a periodic check should be made of the cylinder dehydrator plugs and desiccant. **When the color of the desiccant has turned from blue to pink the preservation procedure must be repeated.**

Ready to fly again? Remove the seals, tape and desiccant bags. Use a solvent to remove the tape residue. Remove the spark plugs or dehydrator plugs. With the magnetos off, rotate the propeller by hand through sufficient rotation to remove excess preservative oil from the cylinders. Drain the remaining preservative from the engine through the sump.

To prepare the engine for long-term storage per Continental's SIL 99-1, drain the engine oil and remove and replace the oil filter with a new one and service

Install dehydrator plugs in each of the upper plug holes, making sure each plug is blue in color. Recommended that the cylinder bores of all engines prepared for indefinite storage must be re-sprayed with corrosion preventive mixture every 90 days.

Other Precautions

The original equipment manufacturer for Marvel-Schebler carburetors recommends that the float bowl be drained and that a light coating of MIL-C-4339 preservative oil be sprayed in the throat of the carb and on any exterior surfaces. It does not recommend that the bowl interior be flooded with the oil.

Wake It Up With Caution

It is important to remember that long-term preservation of engines can result in trapping **large amounts of oil in the combustion chambers of one or more cylinders.**

For this reason, **engines should not be rotated until all of the preservative oil is drained away.** Failure to do so can result in damage to the piston, connecting rod and crankshaft of the flooded cylinder. If there is any question in preserving or waking up an engine, lobby the help of an A&P mechanic.

And it goes without saying that you need to service the oil sump with the correct grade oil and a fresh oil filter. Do a thorough ground run, followed by an engine leak check before flying it.

Second, beware of possible dangers from your Exhaust System

For Your Aircraft's Exhaust System, Inspection is Critical

For Your Aircraft's Exhaust System, Inspection is Critical - Aviation Consumer

When exhaust systems wear out, they create a serious safety of flight risk. Replacement systems from Power Flow claim to boost performance.

For most owners, the exhaust system is an out-of-sight, out-of-mind portion of the airplane. Nevertheless, all exhaust systems deserve a great deal of respect and your attention and consideration if any component fails, the risks are nothing short of serious: carbon monoxide poisoning of the aircraft occupants, partial or total engine power loss and fire.

Care and Feeding
Normally made of stainless steel or the nickel-chromium alloy, Inconel, an exhaust system wears from the inside out, which makes an evaluation of its condition challenging until signs of wear show up in the form of cracks, holes bulges or ripples.

What Can Go Wrong
As exhaust systems wear, the components become thinner and become susceptible to cracking from vibration, or bulging—and blowing out—from the pressure.

An opening in the exhaust system in the heat exchanger for cabin heating means that exhaust gases are going to be introduced into the cabin. Pilot incapacitation due to CO poisoning is the cause of a few accidents every year.

Editor Note: The best protection is having a CO Sensor in the airplane. There are many CO warning sensors available

From the simple and cheap

ASA Carbon Monoxide Detector

Looking for a cheap option to have in the cockpit? Check out the ASA Carbon Monoxide Detector which is a complete analog take on the detection of CO gasses. The concept is really simple, the ASA CO Detector features an orange wafer that darkens when exposed to the presence of Carbon Monoxide. This has an adhesive backing which makes it really easy to stick onto the panels of aircraft. The ASA Carbon Monoxide detector has a shelf life of around 3 years which makes it effective for many flights.

Even if you don't decide to get an electronic option you should at least have this $5 slapped onto any cockpit as good practice.

To the automatic and expensive

Carbon Monoxide Detectors

Carbon monoxide detectors are one of the must-haves if you are an aircraft owner, this ensures that you identify any leaks into the cockpit and are able to address them quickly. Carbon monoxide is something that pilots should not take lightly; CO is a deadly gas that is virtually undetectable to the human sense of smell. Essentially, you could be consuming Carbon monoxide during a flight and won't notice until it's too late.

In all likelihood, the chance of you having a fatal incident from a carbon monoxide leak is very low (according to NTSB Crash Statistics). However, being an avid traveler, pilot, or passenger is rule number 1 to always be prepared. Understanding the risks, options, and situations when it comes to carbon monoxide is important for every pilot.

Click the link for a video

https://www.youtube.com/watch?v=Nj_WLXsOYM8&t=7s

What to do if you detect Carbon Monoxide in the Cockpit?

According to the FAA guidelines, there are a couple of immediate actions you should take if you believe there is a carbon monoxide leak in the cockpit.

Turn off any Cabin Heat

Generally speaking, general aviation aircraft use the exhaust in order to heat the air going into the cockpit vents. However, in a bad situation, these can leak through the air vents and into the cockpit.

Open windows if the Aircraft flight profile permits

Obviously, this goes without saying, Open the windows! If your aircraft profile permits, one of the actions should always be to try and find fresh air. If this means descending or slowing down to an appropriate speed, all action is appropriate in an emergency.

If Available, Use supplemental oxygen

Use any supplemental oxygen available onboard. This will provide you clean breathing air which will clear your head to make appropriate decisions. Of course, only use this option if the conditions permit.

Read more at:

https://www.faa.gov/pilots/safety/pilotsafetybrochures/media/cobroforweb.pdf

If an exhaust system component breaks off or opens up, that means the blow torch of exhaust gases is being released inside the cowling. so the odds are good that the blow torch is going to be pointed at something important—perhaps a fuel or oil line or an engine mount. It doesn't take long for that blow torch to open up a flammable fluid line and start a fire.

If your mechanic tells you that there is an issue with the exhaust system, that you take it seriously and have it **repaired before your next flight.**

Fixes

Okay, your mechanic just said that components on your exhaust system have problems, notably a crack on one and a bulge on another. What are your options?

It's not uncommon for mechanics to do field weld repairs on exhaust systems, especially on normally aspirated engines. **Because the quality of welds we've seen has varied dramatically, we are not big fans of weld repairs of exhaust systems** unless carried out by shops that specialize or mechanics who know precisely what they're doing.

When systems show signs of distress, shops tell us that their practice is to pull the system and send it out to a specialized shop asking the shop to "evaluate and advise."

All of the specialty houses can do repairs and most offer new or overhauled components and systems. Overhauled means that some portion of the original component was reused.

Conclusion
We strongly recommend that you **eyeball the visible portions of your exhaust system for cracks and areas of gray soot on each preflight** and make sure it is inspected carefully at each annual—and that you take seriously any signs of distress.

7 Collision Avoidance Habits

By Adam Woolley

Editors Note: This article is from a Soaring Website, but the insights are valid no matter what type of flying you do!

We're taught from our very first lesson about scanning for other gliders/aircraft, that maintaining a scan is super important. Having your head buried Inside the Airplane or having your attention drawn away from looking for other aircraft for even as little as 5-10 seconds straight, is far too long.

Why?

Everyone else may be doing the same, so have a good look, then start your scanning habits again, because others are attracted to the same thing you are, and could be similarly distracted!

You have a responsibility to fly in a way that will not endanger either of your lives.

Here are 7 findings on collision avoidance:

1. It all starts with a good scan and developing good scanning habits. Systematically moving your vision from point to point in the sky.

2. When you're on collision course, that is probably unavoidable, aircraft start out as small stationary objects and increase in size rapidly, ***all without moving relative to your position, which is why they are 'invisible' to your eye.***

3. Minimize your time looking inside your cockpit, arrange your instruments thoughtfully (a good idea for reducing fatigue too, as less scanning is required!), clean your canopy/windscreen each flight.

4. **When you're in cruise, the area which is the biggest threat is**
   Plus/minus 10 degrees above and below
   45 degrees to either side.

   Give this area the most attention, your cruising scan can be done with medium untiring head movements.

5. Entering an area of lift, be sure to have a good look in the direction of the turn. As you're slowing up, make sure you look up into the resulting flight path too, always look for the glider you haven't seen! What about leaving the thermal? You need to look there too and accelerate out of the thermal smoothly and predictably.

6. **When approaching a turn (nav) point, an airfield,** a cloud, others already climbing, or anywhere where there are potentially other gliders or aircraft, you'll need to **increase your scan rate, and make it a priority scan for you, and the others you're approaching.**

7. **Situational awareness is king, maintaining a mental picture of who is around you is vital.** This should be done by the Mach one eyeball.
   Using Flarm/ADSB as an aide (but don't become obsessed with it), to help see and avoid should be used as a last resort because they take your attention away from outside the aircraft

Editors Note: ***Always remember, that your Awareness of where traffic is located may not be accurate****. This is because, the information you are basing your awareness on may NOT be correct.* ***Such as, someone calling pattern locations for one runway when he is in fact setting up to land in the opposite direction!!!!*** *True situation that occurred one Saturday at Clifton!!!!!!*

So, on your next flight, keep all these items in mind, and find some others that may work for you to help keep you and your flying buddies stay safe, through safe flying manners, effective scanning, and situational awareness of the situation.

LOOK OUT! IT'S MORE FUN IF YOU DO!

When there is a problem to be solved, Someone Will Find a way to Solve It

https://www.youtube.com/watch?v=Ecosb5mSDwo&t=13s

The First Flying Machines - Failures and Mishaps

https://www.youtube.com/watch?app=desktop&v=M9Yww9LG3gw&list=FLTbOuDl1zX807KTuxpeyRpg&index=1&fbclid=IwAR3w_LDPJVVUv2QsYblmCEz15HowMKi5R60HqGreJuU4qf1thRp3WTGuwb8

So I was boarding a regional airliner while wearing my Cub shirt and cap. The young copilot with peach fuzz for a beard was on the gateway. He compliments me saying,"Nice shirt. Piper Cub? Is that a baseball team?"

The flight attendant laughed. She corrected him saying that the Piper Cub is an airplane.

Editor's Note: Found this article about being and staying proficient. Most may consider that their weekend flying is sufficient. But, over the last year or more how much has your flying really decreased? Considering Covid, days that weren't flyable due to weather, family outings,and as the article below summarizes, how many days have you decided not to fly due to the cost of fuel?

Please review the information below for ideas how to maintain proficiency while you may be flying fewer hours, especially over the upcoming winter.

Mitigating Skill Fade

Expert tips for staying proficient in the face of rising fuel costs

September 1, 2022

https://aopa.org/news-and-media/all-news/2022/september/pilot/proficiency-mitigating-skill-fade

Pain at the pump is creating pain in the wallet, and for some pilots, that's adding up to flying less. With the average GA pilot in the United States flying less than 50 hours per year prior to the latest round of inflation, how can you maintain proficiency while flying even less?

Here are four strategies for keeping your edge in these edgy times.

1. Spend the time (you can afford) wisely

Paul J. Preidecker, president of the National Association of Flight Instructors (NAFI), says he thinks the solution is a "very focused plan of action" to maximize whatever hours you can afford to fly.

> He says that it's "too easy" for pilots "to default to flying a few loops around the pattern for takeoff and landing practice, and call it good."

Rather, he thinks pilots should treat limited flight time more like a flight review.

He suggests short cross-countries with a review of emergency procedures. If instrument-rated, he says fly a couple of complex approaches, rather than simple ones.

Jon Kotwicki, founder and chief instructor of FLY 8MA, an online learning provider, also favors maximizing whatever hours you can afford to fly.

To do so, he says, "ask yourself if you could pass a private pilot checkride easily today. If the answer is 'no,' make a list of items to sharpen up."

Then "be purposeful to create a local flight plan that will allow you to practice those items in the plane solo, or with a CFI, and get as many completed in the shortest time possible."

Gus Putsche, who knows a lot about maintaining proficiency as a member of the operations team at the Pilot Proficiency Center at EAA AirVenture, says today's problem isn't new.

"The cost of flying and the desire to keep current without breaking the bank has been an ongoing issue and topic of discussion for years," he says.

But although the traditional solution was to shop for the cheapest rentals of airplanes, often ones that "looked a little worse for wear," improvements in computer technology have created new opportunities for staying current: using simulators.

2. Rent an airplane that doesn't fly

Second-career flight instructor Victor Vogel, who spent 25 years as a medical school professor, says his airport owns

Redbird FMX full-motion advanced aviation training device configured to mimic a Cessna 172, which rents for half the cost of his flight school's Cessna 172. "My impression is that the simulator is an excellent tool for both initial training and for maintaining proficiency."

Redbird has created an app specifically designed to help pilots maintain and track proficiency using sims

> Even basic aviation training devices, when used with creative lesson plans, have "improved to the point of sweaty palms and total immersion in the scenarios that evoke the need for proper procedure and response."
>
> Simulators can help keep up proficiency, "even for non-instrument pilots."

3. Sim at home

Gold Seal flight instructor Brian Schiff, one of the AOPA Foundation's Rusty Pilots presenters (as well as being a speaker, writer, and airline captain), says that,

Used correctly, sims don't need to cost more than your airplane to be effective. He likes the high-definition version of X-Plane 11 for home computers. He says to be sure to fly the model that "most approximates" the airplane you fly; and that the feedback he gets from pilots he trains is that "it really works, especially if you are religious about how you operate it."

There's more to proficiency than simply maintaining your edge, keeping legal, and flying safely.

> Celebrity CFI Rod Machado is also a fan of home sims and is a champion of Microsoft Flight Simulator X, which he confesses can be hard to find nowadays.

4. Don't worry so much about the stick and rudder

Preidecker also feels that

> Pilots can keep their heads in the game "by signing up for more webinars and seminars, or selecting some online courses to review."
>
> Rod Machado agrees, and says that, "degradation of flying skill doesn't occur as quickly as the degradation of confidence. In other words, a pilot might not fly for six months and only experience a small decrease in flying skill.
>
> He will, however, experience a disproportionate decrease in the confidence he had six months prior."
>
> So, the key, if you can't keep your body in the game, says Machado, is to keep your head in the game between flights. "*I'm speaking of maintaining a*

constant course of study. Reading, watching flying videos, participating in safety seminars, are all excellent ways of keeping your head in the game."

Making study social. "Get a study group together, or even run an aviation trivia night at the airport. Flying is expensive," he says, "pizza and drinks, not so much." ***Like attending our VMC Meetings***

"Honestly, stick and rudder atrophies less than the mental aspects of flying.

We get rusty on communications, regs, procedure, and decision making."

Schiff says another cheap way to maintain proficiency is to literally hangar fly, "Sit in an airplane without flying it," says Schiff. "Go through the motions, normal and emergency. Read the manual, while sitting in the airplane."

The right approach

There's more to proficiency than simply maintaining your edge, keeping legal, and flying safely. Expanding on his thoughts on how a reduction in flying time can lead to decreased confidence, Machado says, **"Ultimately, a decrease in confidence manifests primarily in self-doubt, which diminishes the pleasure we derive from flying."**

Luckily, the converse is true, too.

Prioritizing proficiency, by deploying any or all the tips from these experts increases confidence.

That, in turn, dissolves self-doubt and increases the pleasure we derive from flying. And that's the ultimate benefit of proficiency: increasing the joy of every hour you have in the air, no matter how many, or how few, those hours are.

FLYING

History's Unique Aircraft

The Unconventional Fisher P-75 Eagle

The U.S. Army Air Forces took a gamble on this hodgepodge aircraft, which later proved to be a poor bet.

By Jason McDowell

Sporting F4U Corsair main landing gear and a number of components from other aircraft, the P-75 Eagle was a hodgepodge of parts and ideas.

In early 1942, the U.S. Army Air Forces wanted to add a high-performance fighter/interceptor to the fleet. Rather than opting for a modified version of an existing aircraft like the P-51 Mustang or P-38 Lightning, they ultimately decided to take a gamble on a wholly unconventional aircraft designed and produced by an auto manufacturer using unconventional design philosophies.

This aircraft became known as the Fisher P-75 Eagle and proved to be a poor bet in more ways than one.

At the time, the **Fisher Body Division was a subsidiary of General Motors,** employing more than 100,000 people and producing a variety of metal components in more than 40 plants. With the advent of World War II, capacity was shifted to the manufacture of airframe components for the war effort. Among the aviation-related contracts were agreements to produce airframe parts for the B-25 Mitchell as well as the production and assembly of 200 Boeing B-29 Superfortress bombers.

When the military ordered 2,500 P-75s that existed only on paper, Fisher aimed to utilize some automobile manufacturing philosophies to develop, build, and deliver the aircraft in time.

Airframe assembly for production is considerably different from the design, testing, and manufacture of an entirely new aircraft from scratch, however, and Fisher would learn this the hard way.

Most notably, the company selected a new, experimental engine, placed it in the center of the aircraft rather than in the nose, and utilized two drive shafts to link it to twin contra rotating propellers. Both unconventional and complex, the powertrain created new problems that flight test engineers had to identify and solve.

Bristling with intakes and exhaust stacks, the Fisher P-75 Eagle reveals its unusual engine placement behind the cockpit.

Perhaps recognizing the inefficiencies inherent in utilizing such unproven concepts, Fisher attempted to simplify the manufacturing process and expense of the aircraft through the use of existing components elsewhere in the airframe wherever possible.

They utilized P-51 wings in initial versions, later switching to P-40 wings. The empennage and tail were repurposed from the Douglas A-24 Banshee, and the main landing gear came from the F4U Corsair.

Initial flight testing revealed serious problems, both aerodynamic and mechanical in nature. Miscalculations in the center of mass resulted in poor spin characteristics and stability issues. Fisher addressed these in part through a redesign of the tail, thus eliminating any production advantages to using the original A-24 tail.

Work also had to be done on the engine, as it was prone to overheating and wasn't able to produce the specified horsepower. By the time the problems were addressed,

the military realized it would be quicker and more cost-effective to modify proven aircraft types that were already in service.

Shortly after production had started, the contract was canceled entirely with only eight prototypes and six production aircraft having been completed.

A prototype XP-75, sporting the original canopy and tail.

Of those 14 aircraft, three crashed during testing and all but one was scrapped.

The sole remaining example, pictured here, has been restored and is presently on display at the National Museum of the United States Air Force in Dayton, Ohio.

PLACES YOU MIGHT LIKE TO ADD TO YOUR AVIATION BUCKET LIST:

Do you have a favorite Aviation place that you haven't visited yet? Or, one you have visited and you think that the rest of us would enjoy? A place you think should be put on our Bucket List of things to do/see? If so, why not share it with the rest of us? Send your Aviation Bucket List Place to me and I will put it in our next Newsletter.

This month we will visit Marathon Key in care of an ad in AOPA's Newsletter

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Open daily 10 a.m. to 4 p.m., the museum features artifacts, historic photographs, memorabilia, books and a flight simulator.

A rented hangar space behind the small museum houses a Beechcraft Model 18. Visitors can climb inside the twin-engine cargo plane that transported passengers including military officers during World War II, or sit inside the eye-catching 1942-era military DC-3.

There is no admission cost, but donations are welcome to help maintain the mid-Keys attraction that is partially funded by the southernmost Experimental Aircraft Association Chapter 1241.

Immersive Experiences

Florida Keys Aquarium Encounters features a coral reef exhibit and a predatory fish habitat housed in a 200,000-gallon interconnected saltwater aquarium.

Visitors can enjoy an immersive, interactive experience where they can touch, feel and feed reef fish, invertebrates, stingrays and even sharks.

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Interesting and useful websites on the Internet:

NOTE: You may have to copy and paste the address into your browser if the link doesn't work

I have added a few that I use.

If anyone knows of other interesting websites let me know and I will add them to the list

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